

CLAIMS:

1. A method for imaging eyeglasses, and obtaining data indicative of at least an outline of the eyeglasses and designated locations associated with the outline, comprising:

- (a) placing the eyeglasses for imaging;
- (b) acquiring and displaying an image of the eyeglasses using a short focal length imaging device;
- 10 (c) calculating and displaying an editable outline for each eyepiece of the eyeglasses, such that the editable outline can be compared to a respective eyepiece of the image;
- (d) calculating supplemental locations associated with the outline for anchoring parts of an add-on unit; and
- 15 (e) providing data indicative of at least said outline and said supplemental locations;

whereby said data is useable for shaping lenses of at least one customized add-on unit and manufacturing in a non-industrial scale the at least one an add-on unit having, each, a size and shape that substantially matches the eyeglasses.

20 2. A method for imaging eyeglasses having lenses, and obtaining data indicative of at least an outline of the eyeglasses and designated locations associated with the outline, comprising:

- (i) placing the eyeglasses for imaging;
- (ii) acquiring and displaying an image of the eyeglasses using a short focal length imaging device;
- 25 (iii) calculating and displaying an editable outline for each eyepiece of the eyeglasses, such that the editable outline can be compared to a respective eyepiece of the image;
- (iv) calculating supplemental locations associated with the outline for manufacturing holes and/or slots that anchor clip-on parts that include
- 30

bridge and legs; and

- (v) providing data indicative of at least said outline and said supplemental locations;

whereby said data is useable for shaping clip-on lenses and shaping holes or slots in the clip-on lenses in order to anchor the clip-on parts to the clip-on lenses and to manufacture in a non-industrial scale at least one customized clip-on having, each, a size and shape that substantially matches the eyeglasses.

3. The method according to Claim 2, wherein said step (b) includes:

providing an imaging window for a scanned eyepiece; the window embraces an eyepiece of said eyeglass and at least half of said eyeglass bridge, so as to obtain an image of the scanned eyepiece that includes an eyepiece image;

said step (c) includes: calculating and displaying said editable outline in respect of the scanned eyepiece;

- 15 said step (d) includes: calculating said supplemental locations in respect of the scanned eyepiece;

said method further comprising calculating an editable outline and supplemental locations for the other non scanned eyepiece.

4. The method according to Claim 2, wherein said editable outline is substantially superimposed on the image or derivative thereof and displayed in a distinguishable manner.

5. The method according to Claim 3, wherein said editable outline is substantially superimposed on the image or derivative thereof and displayed in a distinguishable manner.

- 25 6. The method according to Claim 2, further comprising the step of: providing an interface for editing the image; said editing includes at least removal of the bridge or substantial part thereof.

7. The method according to Claim 4, further comprising the step of: providing an interface for editing the image; said editing includes at least removal
30 of the bridge or substantial part thereof.

8. The method according to Claim 6, wherein said step (c) includes calculating substantial part of said outline for the eyepiece , and calculating a supplemental part of the outline which includes sector that substantially corresponds to the bridge area during said editing step.
- 5 9. The method according to Claim 7, wherein said step (c) includes calculating substantial part of said outline for the frame eyepiece, and calculating a supplemental part of the outline which includes sector that substantially corresponds to the bridge area after said editing step.
10. The method according to Claim 2, wherein said step (c) includes:
10 providing lens curvature data and applying compensation to said outline according to said lens curvature.
11. The method according to Claim 4, wherein said step (c) includes:
providing lens curvature data and applying compensation to said outline according to said lens curvature.
- 15 12. The method according to Claim 8, wherein said step (c) includes:
providing lens curvature data and applying compensation to said outline according to said lens curvature.
13. The method according to Claim 9, wherein said step (c) includes:
providing lens curvature data and applying compensation to said outline
20 according to said lens curvature.
14. The method according to Claim 10, wherein said providing step includes: receiving or extracting said lens curvature data.
15. The method according to Claim 11, wherein said providing step includes:
receiving or extracting said lens curvature data.
- 25 16. The method according to Claim 12, wherein said providing step includes:
receiving or extracting said lens curvature data.
17. The method according to Claim 13, wherein said providing step includes:
receiving or extracting said lens curvature data.
18. The method according to Claim 10, wherein said providing step includes
30 calculating automatically said lens curvature data.

19. The method according to Claim 11, wherein said providing step includes calculating automatically said lens curvature data.
20. The method according to Claim 12, wherein said providing step includes calculating automatically said lens curvature data.
- 5 21. The method according to Claim 13, wherein said providing step includes calculating automatically said lens curvature data.
22. The method according to Claim 1, wherein said imaging device includes an illumination source in the visible range.
23. The method according to Claim 2, wherein said imaging device includes
10 an illumination source in the visible range.
24. The method according to Claim 1, wherein said imaging device includes an illumination source in the ultra-violet range.
25. The method according to Claim 2, wherein said imaging device includes an illumination source in the ultra-violet range.
- 15 26. The method according to Claim 1, wherein said eyeglasses include lenses fitted in a frame.
27. The method according to Claim 2, wherein said eyeglasses include lenses fitted in a frame.
28. The method according to Claim 1, wherein said eyeglasses are rimless.
- 20 29. The method according to Claim 2, wherein said eyeglasses are rimless.
30. The method of Claim 1, further comprising the steps of: providing an interface for selecting add-on parts from a repertoire of available add-on parts; and in response to user selection, displaying the add-on image with the selected parts, and upon approval of the user calculating the supplemental locations that
25 correspond to the selected parts.
31. The method of Claim 2, further comprising the steps of: providing an interface for selecting clip-on parts from a repertoire of available clip-on parts; and in response to user selection, displaying the clip-on image with the selected parts, and upon approval of the user calculating the supplemental locations that
30 correspond to the selected parts.

32. A method for manufacturing in a non-industrial scale and substantially in real-time at least one customized clip-on having, each, size and shape that substantially matches an eyeglasses frame, the method comprising the steps of:

- (i) placing the eyeglasses for imaging;
- 5 (ii) acquiring and displaying an image of the eyeglasses using a short focal length imaging device;
- (iii) calculating and displaying an editable outline for each eyepiece of the eyeglasses, such that the editable outline can be compared to a respective eyepiece of the image;
- 10 (iv) calculating supplemental locations associated with the outline for manufacturing holes and/or slots that anchor clip-on parts that include at least bridge and legs; and
- (v) providing to a shaping machine data indicative of at least said outline and said supplemental locations;
- 15 (vi) shaping clip-on lenses and shaping holes and/or slots in the clip-on lenses according to said provided data; and
- (vii) assembling the clip-on lenses and the clip-on parts so as to produce said at least one clip-on.

20 33. A method for imaging eyeglasses having lenses, and obtaining data indicative of at least an outline of the eyeglasses and designated locations associated with the outline, comprising:

- (i) placing the eyeglasses for imaging;
- (ii) acquiring and displaying an image of the eyeglasses.
- 25 (iii) calculating and displaying an editable outline for each eyepiece of the eyeglasses, such that the editable outline can be compared to a respective eyepiece of the image;
- (iv) calculating supplemental locations associated with the outline for anchoring clip-on parts; and

(v) providing data indicative of at least said outline and said supplemental locations;

whereby said data is useable for shaping clip-on lenses and to manufacture
5 in a non-industrial scale at least one customized clip-on having, each, a size and shape that substantially matches the eyeglasses.

34. The method according to Claim 33, wherein said step (ii) includes:

acquiring and displaying an image of the eyeglasses using a short focal length imaging device.

10 35. The method according to Claim 33, wherein said step (ii) includes:

acquiring and displaying an image of the eyeglasses using a long focal length imaging device.

36. A system for imaging eyeglasses, and obtaining data indicative of at least an outline of the eyeglasses and designated locations associated with the
15 outline, comprising:

a positioning device for placing the eyeglasses for imaging;

a short focal length imaging device configured to acquire an image of the eyeglasses;

a processor and associated display configured to perform at least the
20 following:

calculating an editable outline for each eyepiece of the eyeglasses and display said outline and said image, such that the editable outline can be compared to a respective eyepiece of the image;

calculating supplemental locations associated with the outline for
25 anchoring parts of an add-on unit; and

providing data indicative of at least said outline and said supplemental locations,

whereby said data is useable for shaping lenses of at least one customized add-on unit and manufacturing in a non-industrial scale the at least one an add-on
30 unit having, each, a size and shape that substantially matches the eyeglasses.

37. A system for imaging eyeglasses having lenses, and obtaining data indicative of at least an outline of the eyeglasses and designated locations associated with the outline, comprising:

- a positioning device for placing the eyeglasses for imaging;
- 5 a short focal length imaging device for acquiring an image of the eyeglasses;
- a processor and associated display configured to perform at least the following:
 - calculating an editable outline for each eyepiece of the eyeglasses and display said outline and said image, such that the editable outline can be compared to a respective eyepiece of the image;
 - 10 calculating supplemental locations associated with the outline for manufacturing holes and/or slots that anchor clip-on parts that include bridge and legs; and
 - providing data indicative of at least said outline and said supplemental locations;
- 15 whereby said data is useable for shaping clip-on lenses and shaping holes or slots in the clip-on lenses in order to anchor the clip-on parts to the clip-on lenses and to manufacture in a non-industrial scale at least one customized clip-on having, each, a size and shape that substantially matches the eyeglasses.

38. A system for manufacturing in a non-industrial scale and substantially in real-time at least one customized clip-on having, each, size and shape that substantially matches an eyeglasses frame, the system comprising:

- a positioning device for placing the eyeglasses for imaging;
- a short focal length imaging device for acquiring an image of the eyeglasses;
- 25 a processor and associated display configured to perform at least the following:
 - calculating and an editable outline for each eyepiece of the eyeglasses and displaying the outline and the image, such that the editable outline can be compared to a respective eyepiece of the image;

calculating supplemental locations associated with the outline for manufacturing holes and/or slots that anchor clip-on parts that include at least bridge and legs;

providing to a shaping machine data indicative of at least said outline and
5 said supplemental locations;

the shaping machine responsive to said data for shaping clip-on lenses and shaping holes and/or slots in the clip-on lenses according to said provided data, for assembling the clip-on lenses and the clip-on parts so as to produce said at least one clip-on.

10

39. A system for imaging eyeglasses having lenses, and obtaining data indicative of at least an outline of the eyeglasses and designated locations associated with the outline, comprising:

a positioning device for placing the eyeglasses for imaging;

15 an imaging device for acquiring and displaying an image of the eyeglasses.

a processor and associated display configured to perform at least the following:

calculating an editable outline for each eyepiece of the eyeglasses and displaying the outline and the image, such that the editable outline can be

20 compared to a respective eyepiece of the image;

calculating supplemental locations associated with the outline for anchoring clip-on parts; and

providing data indicative of at least said outline and said supplemental locations;

whereby said data is useable for shaping clip-on lenses and to manufacture
25 in a non-industrial scale at least one customized clip-on having, each, a size and shape that substantially matches the eyeglasses.